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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,753	10/30/2003	Yang Hoon Kim	HI-0182	6170

34610 7590 04/19/2006

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EXAMINER	
MOON, SEOKYUN	
ART UNIT	**PAPER NUMBER**
2629	

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,753	KIM, YANG HOON	
	Examiner	Art Unit	
	Seokyun Moon	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/26/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) filed on July 26, 2004 has been acknowledged and considered by the Examiner.

An initial copy of the PTO-1449 is included in this correspondence.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Pat. No. 5,854,617, herein after referred to as "Lee") in view of Weindorf (U.S. Pat. No. 6,762,741 B2, herein after referred to as "Weindorf").

As to **claim 1**, Lee teaches a method for adjusting a brightness level of a display used in a portable computer system [*Abstract Lines 1-6*], the method comprising:

providing brightness control information (whether present luminescence is needed to be / is able to be lowered or not) for a plurality of brightness levels [*Cols. 8 and 9 Table 1*] for one power mode type (when "*AC adaptor*" is not connected to Lee's portable device, i.e. when Lee's device is operated with "*battery*" which is used as a power source for the device) [*Fig. 5*] [*Col. 8 Line 24 – Col. 9 Line 15*];

providing brightness control information (a signal clearing the unnecessary timer interrupt at step S590) for another power mode type ("when "*AC adaptor*" is connected to Lee's portable device, i.e. when Lee's device is operated with "*AC adaptor*" which is used as a power source for the device) [*Fig. 5*] [*Col. 8 Lines 24-31*];

confirming a type of power mode currently being used out of said at least two power mode types (whether Lee's device is operated with "*AC adaptor*" or "*battery*") [*Col. 5 Lines 26-32*]; and

controlling the brightness level of the display by using corresponding brightness control information on the confirmed power mode [*Fig. 5*] [*Col. 8 Line 24 – Col. 9 Line 15*].

Lee does not disclose the method comprising providing brightness control information for a plurality of brightness levels for AC adaptor mode (when "*AC adaptor*" is connected to Lee's device, thus "*AC adaptor*" is used as a power source for Lee's device).

However, Weindorf teaches a method providing brightness control information (adjusting brightness) for a plurality of brightness levels for AC adaptor mode

(Weindorf's device is driven with a "*voltage supply 110*" as shown in *Fig. 1* and as disclosed in *Col. 5 Lines 56-60*) [*Cols. 8* and *9 Table 1*] [*Col. 9 Lines 45-55*].

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a method of providing brightness control information for a plurality of brightness levels for AC adaptor mode in Lee, as taught by Weindorf, to provide an automatic brightness control system which controls the display brightness depending on an ambient light, thus to reduce unnecessary power consumption of Lee's device when the device is operated in AC adaptor mode which utilizes full power [*Col. 3 Lines 38-42*].

As to **claim 2**, Lee teaches the type of power mode currently being used to include at least one of an AC adaptor mode and a supplementary battery mode [*Col. 8 Lines 24-35*].

Lee does not teach the method adjusting the brightness level of a LCD using an input device.

However, Weindorf [*Col. 10 Table 2*] teaches a method adjusting the brightness level of a LCD [*Col. 5 Lines 19-20*] using an input device [*Col. 9 Line 55 – Col. 10 Line 35*].

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a method of adjusting the brightness level of a LCD using an input device in Lee, as taught by Weindorf, to allow the use to override / adjust the luminance to increase or decrease the brightness according to a user preference [*Col. 9 Lines 55-58*].

As to **claim 3**, Lee inherently teaches the method, wherein when power of the portable computer system is switched to a power on mode from a power off mode, the type of power mode currently being used includes at least one of an AC adaptor mode and a supplementary battery mode since Lee's device includes two modes, a supplementary battery mode and an AC adaptor mode [*Col. 8 Lines 24-35*] and Lee's device is operated in either one of modes when the device is in operation, thus it is required for Lee's device to be operated in either one of mode when the device is turned on.

As to **claim 4**, Lee inherently teaches the method, wherein when the power mode type currently being used in the portable computer system is changed to a different power mode type, the changed power mode type includes at least one of an AC adaptor mode and a supplementary battery mode since Lee's device includes two modes, a supplementary battery mode and an AC adaptor mode [*Col. 8 Lines 24-35*] and Lee's device is operated in either one of modes when the device is in operation.

As to **claim 5**, Lee [*Fig. 5*] teaches the method wherein when a power supply being confirmed is a supplementary battery (when "*AC adaptor*" is not connected to Lee's device), the brightness level of the display is adjusted by using an index information corresponding to the brightness levels [*Cols. 8* and *9 Table 1*] in a battery power mode [*Col. 8 Line 24 – Col. 9 Line 15*].

As to **claim 6**, the modified Lee as discussed with respect to the rejection of claim 1 teaches the method, wherein when a power supply being confirmed is an AC adaptor (Weindorf: Weindorf's device is driven with a "*voltage supply 110*" as shown in

Fig. 1), the brightness level of the display is adjusted by using an index information [Weindorf: *Cols. 8* and *9 Table 1*] corresponding to the brightness levels in an AC adaptor power mode [Weindorf: *Col. 9 Lines 45-55*].

As to **claim 7**, the modified Lee teaches that the index information [Weindorf: *Cols. 8* and *9 Table 1*] corresponding to the brightness levels in the AC adaptor power mode (Weindorf: Weindorf's device is driven with a "*voltage supply 110*" as shown in *Fig. 1*) and the index information [Lee: *Cols. 8* and *9 Table 1*] corresponding to the brightness levels in the battery power mode (Lee: when "*AC adaptor*" is not connected to Lee's device) are independent (since the variables effecting the two index information are different) and respectively stored in a storage device (Lee: a storage element implemented in "*microcontroller 20*" storing the index information shown in *Fig. 2*) (Weindorf: the index information in the AC adaptor power mode is stored in a memory *Col. 14 Lines 49-50*).

As to **claim 8**, the modified Lee teaches the index information corresponding to the brightness levels in the AC adaptor power mode and the index information corresponding to the brightness levels in the battery power mode to be separately stored in a microcomputer memory (Lee: a storage element implemented in "*microcontroller 20*" storing the index information shown in *Fig. 2*) of the personal computer system (Lee: "*portable computer*") and in a system memory (Weindorf: the index information in the AC adaptor power mode is stored in a memory *Col. 14 Lines 49-50*).

The modified Lee does not expressly disclose the memory being used to store the index information in the AC adaptor power mode to be a system initialization RAM.

However, examiner takes official notice that using RAM in a computer system is well known method in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to specify the modified Lee's memory used to store the index information in the AC adaptor power mode to be a RAM since RAM is known for large capacity for storing information and ROM cannot be used in the modified Lee since the modified Lee requires a function of rewriting the index information in the memory.

As to **claim 9**, the modified Lee teaches that when a power supply being confirmed is an AC adaptor, the brightness level of the display is adjusted by using an index information [Weindorf: *Cols. 8* and *9 Table 1*] corresponding to the brightness levels in an AC adaptor power mode [Weindorf: *Col. 9 Lines 45-55*].

5. **Claim 10-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Weindorf as applied to claim 1 above, and further in view of Woo (U.S. Pub. No. 2002/0041280 A1, herein after referred to as "Woo").

As to **claim 10**, the modified Lee as discussed with respect to the rejection of claim 1 teaches a method, comprising:

determining a type of power supply currently being used (whether Lee's device is operated with "*AC adaptor*" or "*battery*") among a plurality of power supplies in a computer system when a brightness level of a display is adjusted [Lee: *Col. 5 Lines 26-32*];

selecting a brightness level information corresponding to the determined power supply type ("*AC adaptor mode*" or "*battery mode*") among brightness level information [Lee: *Cols. 8* and *9 Table 1*] [Weindorf: *Cols. 8* and *9 Table 1*] of the adjusted brightness level of the display for each of the plurality of power supplies and reading an index information corresponding to the selected brightness level information; and

driving the adjusted brightness level of the display based on the readout index information [Lee: *Col. 8 Line 24 – Col. 9 Line 15*] [Weindorf: *Col. 9 Lines 45-55*];

The modified Lee does not teach the method comprising independently storing the index information according to the type of power supply.

However, Woo teaches a method of storing brightness adjustment information in a memory.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a memory storing brightness adjustment information desired by the device user in the modified Lee to implement a function of restoring brightness level of a display when the power mode of the device is changed from off state to on state [*Par. (0010) Lines 5-13*].

As to **claim 11**, the modified Lee as discussed with respect to the rejection of claim 10 teaches a method, wherein the index information (Lee: *Cols. 8* and *9 Table 1* for "*battery mode*" and Weindorf: *Cols. 8* and *9 Table 1* for "*AC adaptor mode*") is stored in a memory [Weindorf: *Col. 14 Lines 49-51*].

The modified Lee does not disclose expressly at least one of an index information corresponding to an adjusted brightness level in an AC adaptor power mode

and an index information corresponding to an adjusted brightness level in a battery mode is separately stored in the memory.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to store the adjusted brightness level of a battery mode in the memory allocated to include the index information regarding the levels to be presented when the display is operated in a battery mode [Lee: *Cols. 8* and *9 Table 1*] and the adjusted brightness level of an AC adaptor mode in the memory allocated to include the index information regarding the brightness level corresponding to the amount of the ambient light around the display device [Weindorf: *Cols. 8* and *9 Table 1*] to eliminate the need of extra storage element and the need of additional processing method to retrieve the adjusted brightness level from the index information stored in a memory.

As to **claim 12**, all of the claim limitations have already been discussed with respect to the rejection of claims 2, 4, 5, and 11.

As to **claim 13**, all of the claim limitations have already been discussed with respect to the rejection of claims 2, 4, 6, and 11.

As to **claim 14**, all of the claim limitations have already been discussed with respect to the rejection of claims 1, 3, and 10.

As to **claim 15**, the modified Lee teaches the brightness level of the display to be adjusted automatically, periodically, or using an input device by a user [*Abstract*] [Lee: *Fig. 4*].

As to **clam 16**, most of the claim limitations have already been discussed with respect to the rejection of claims 5, 6, and 10 except for storing index information for the brightness level of the current power mode when the power mode is changed.

The modified Lee as discussed with respect to the rejection of claim 10 teaches adjusting the stored index information for the brightness level of the current power mode when the power mode is changed (when the power mode of the device is changed from off mode to on mode) [Woo: *Par. (0010)*] *Lines 5-13.*

As to **claim 17**, most of the claim limitations have already been discussed with respect to the rejection of claims 10 and 11 except for designating brightness information in a plurality of brightness levels for each of the two different power modes.

The modified Lee inherently teaches designating brightness information in a plurality of brightness levels for each of the two different power modes since it is required for the modified Lee to designate and to access the memory being used in the current power mode to store the adjusted brightness information in the memory.

As to **claim 18**, all of the claim limitations have already been discussed with respect to the rejection of claim 2.

As to **claim 19**, Lee teaches a brightness level in the AC adaptor mode to be set different than a brightness level in the supplementary battery mode [*Col. 8 Line 24 – Col. 9 Line 15*].

6. **Claims 20** and **21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Weindorf as applied to claim 1 above, and further in view of Fujimura et al. (U.S. Pat. No. 6,239,558 B1, herein after referred to as "Fujimura").

As to **claim 20**, most of the claim limitations have already been discussed with respect to the rejection of claims 5, 6, and 7 except for control means included in an apparatus controlling an inverter pulse width modulation frequency of a display in accordance with a designated brightness level.

Lee [*Fig. 2*] teaches an inverter ("*DC/AC converter 33*") included in an apparatus ("*portable computer*").

Lee does not expressly disclose the apparatus ("*portable computer*") to control an inverter ("*DC/AC converter 33*") pulse width modulation frequency of a liquid crystal display in a portable computer.

However, Fujimura [*Fig. 4*] teaches a method of controlling brightness level of a display device by adjusting an inverter pulse width modulation frequency [*Col. 2 Lines 27-29* and *Lines 34-44*].

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a method of adjusting the luminance or the brightness of a liquid crystal display by adjusting the pulse width modulation frequency in Lee's portable computer, as taught by Fujimura, to allow Lee's portable computer to include an alternative method to change the brightness level of the display as desired.

As to **claim 21**, all of the claim limitations have already been discussed with respect to the rejection of claims 5 and 6.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 13, 2006
S.M.

AMR A. AWAD
PRIMARY EXAMINER
Amr Ahmad Awad